UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/915,620	07/26/2001	Gregory A. Shreve	TDCO:007	6468

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EXAMINER
NGUYEN, SIMON

ART UNIT	PAPER NUMBER
2685	

DATE MAILED: 09/30/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	09/915,620	SHREVE, GREGORY A.
	Examiner	Art Unit
	SIMON D NGUYEN	2685

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *preliminary filed 7/30/02*.

2a)☐ This action is **FINAL.**   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-17 and 19-49* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-17 and 19-49* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *30 July 2002* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date *2,5,6,7*.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

Double Patenting

1.   The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).
        A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).
        Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

2.   Claims 1-17, 19-49 are rejected under the judicially created doctrine of

obviousness-type double patenting as being unpatentable over claims 1-28 of U.S.

Patent No. 6,762,712. Although the conflicting claims are not identical, they are not

patentably distinct from each other because the claims in the application are broader

than the claims in the patent. In particular, the claims lack the step of correlating a

received signal with a template signal to provide an output.

Claim Rejections - 35 USC § 103

3.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4.   Claims 1-6, 8-17, 19-39, 41-49 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Maurice et al. (6,005,510) in view of Frank et al. (6,731,622).

Regarding claim 1, Maurice discloses a communication system for determining a

direct path signal in multipath signals (abstract, figs. 1, 3, 5), comprising: a standard

deviation calculator circuitry (computer 6 of fig.5) configured to determine a standard

deviation of a plurality of data values that corresponds to a radio-frequency signal

received via a communication link (column 5 line 56 to column 6 line 8); and a threshold

circuitry configured to detect a direct-path signal depending on the relative values of the

standard deviation and a threshold signal (column 4 line 7 to column 6 line 47).

However, Maurice does not specifically disclose the standard deviation of data values

within a data frame.

Frank, the same type of invention, discloses the standard deviation of a plurality

of data values is calculated within a data frame (figs. 3, 11, 13, column 12 line 13,

column 14 line 59, column 15 line 51). Therefore it would have been obvious to one

skilled in the art at the time the invention was made to have Maurice, modified by Frank

to detect a direct path in multipath propagation signals in a CDMA system in order to

reduce the variance of estimates as well as more accuracy in calculating the direct path.

Regarding claim 34, this claim is rejected for the same reason as set forth in

claim 1.

Regarding claims 2, 35, Maurice further discloses in which the received radio-

frequency signal is received via a multipath propagation medium (fig.1).

Regarding claim 3, 36, Maurice further discloses in which the threshold circuitry further comprises a comparator circuitry (#23 fig. 5) configured to compare the determined standard deviation with the threshold signal to detect the direct-path signal (column 4 line 66 to column 6 line 47).

Regarding claim 4, 37, Maurice further discloses in which the plurality of data values reside in a window within the data frame (column 2 lines 60-65).

Regarding claims 5, 38, in the modified Maurice discloses the invention related to the processing of multiple paths in radars (column 1 lines 5-7), Frank discloses the invention used in a wideband wireless communication system (column 1 line 24). However, Maurice does not specifically discloses the signals is ultra-wideband signal.

It should be noted that in a radar communication system, received signal comprises an ultra-wideband signal that known to those skilled in the art in order to detect a pulse train signal in a radar communication.

Regarding claims 6, 39, Maurice further discloses in which the threshold signal comprises an overall standard deviation of a noise floor of the communication link, (column 2 lines 37, 42, 50, columns 4-6). However, Maurice does not specifically disclose the step of multiplying by a scaling factor with noise level.

Frank discloses a noise level multiplies by a scaling factor (column 5 line 16, column 6 line 44, column 13 lines 16-35, column 17 lines 6-7). Therefore it would have been obvious to one skilled in the art at the time the invention was made to have Maurice, modified by Frank in order to improve the step of detecting the direct path in multipath propagation.

Regarding claim 8, this claim is rejected for the same reason as set forth in claim 1, wherein the receiver configured to receive signals via a communication link to a plurality of pulses (column 4 lines 25-28) and wherein Frank discloses the invention applied in a radio communication network (fig.5)

Regarding claim 17, this claim is rejected for the same reason as set forth in claim 8. wherein Maurice discloses a responder station as a transmitter (fig.1).

Regarding claim 41, this claim is rejected for the same reason as set forth in claim 8.

Regarding claims 9-11, 19-21, 42-44, in the modified Maurice, Maurice further discloses in which the detector circuitry detects the direct path signal within a data frame that corresponds to the plurality of pulses (column 3 lines 7-22, column 4 lines 7-36), using a standard deviation in a window (column 2 lines 60-65, column 6 lines 6-8), a threshold (column 4 lines 7-10).

Regarding claims 12-14, 22-24, 45-47, these claims are rejected for the same reason as set forth in claims 5-7, respectively.

Regarding claims 15, 25, 48, in the modified Maurice, Maurice further discloses in which the detector circuitry is further configured to successively compare a standard deviation of data values within each of the plurality of sliding windows with the threshold signal (column 2 lines 49-65, column 4 line 66 to column 6 line 47). Regarding claim 16, 26, 27, 49, the modified Maurice system discloses the standard deviation. However, the modified Maurice system does not specifically disclose an average of standard deviation and a scanning circuitry.

Frank, in the same type of invention, discloses an average of a plurality of the

standard deviation is used to compute a direct path signal (column 14 lines 15-32,

column 18 line 27) and a scanning circuitry (column 29 lines 33-67, column 22 lines 9-

33). Therefore, it would have been obvious to one skilled in the art at the time the

invention was made to have the modified Maurice, modified by Frank to precisely

compute a direct path in order to improve the process of detecting a direct path in

multipath signals.

Regarding claims 28-30, in the modified Maurice system, Maurice further

discloses the transceiver station in a radar system (column 1 lines 6-10, 47, column 3

lines 3-25) having a processor (#6 of fig.5), and a detector (#2 of fig.5).

Regarding claims 31-33, in the modified Maurice, Frank discloses a rake

receiver/transmitter arranged to receive multiple signals via fingers (column 8 lines 1-

17). It should be noted that a plurality of fingers is considered as a plurality of receivers,

which is known to those skilled in the art to receive, process a plurality of signals at the

same time in order to shorten time of processing.

5.   Claims 7, 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Maurice et al. (6,005,510) in view of Frank et al., and further in view of McIntosh

(6,232,922).

Regarding claim 7, 40, the modified Maurice system discloses the window for

constitute the information proper (column 2 lines 49-65, column 4 lines 42-45).

However, the modified Maurice system does not specifically disclose a sliding window.

In the same type of invention, McIntosh discloses a sliding window used to constitute the information (column 2 lines 40-45). Therefore it would have been obvious to one skilled in the art at the time the invention was made to have the modified Maurice system, modified by McIntosh in order to maintain track with a constant and relatively long integration time while maintaining a short update rate.

6.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to Simon Nguyen whose telephone number is (703) 308-1116. The examiner can normally be reached on Monday-Friday from 7:00 AM to 4:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward F. Urban, can be reached on (703) 305-4385.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 306-0377.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

Or faxed to:

(703) 872-9314, (for formal communications intended for entry)

Hand-delivered response should be brought to Crystal Park II,

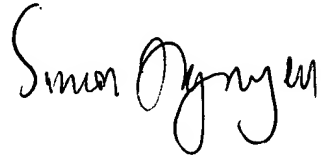2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Simon Nguyen

September 21, 2004